

**REMARKS****Cancellation of Non-Elected Species**

Claims 15 and 49-53 are hereby canceled as directed to non-elected species. Applicant reserves the right to reintroduce the same or substantially similar subject matter in one or more divisional applications.

**Rejections Under 35 U.S.C. § 102**

Claims 1-2, 10-14, 16-18, 23-24, 41-42, 44-46, 48 and 54 were rejected under 35 U.S.C. § 102 (a) as being anticipated by Wang (U.S. Patent 6,091,101). Applicant respectfully traverses.

The Office Action the term “coupled” as “bringing two elements into such close proximity as to permit mutual influence.” Office Action, page 7, first paragraph. Applicant contends that using this definition of coupled, Wang cannot teach that its source 117 and n-well 103 are coupled as Wang teaches that the two are held at differing potentials and, therefore, cannot exert mutual influence. *See, e.g.*, Wang, column 3, line 64 through column 4, line 1 (“For programming charge into the floating gate 2 . . . a voltage of 5 volts is applied to the source 117, . . . and the deep n-well 103 is held at ground.”); column 4, lines 9-12 (“In order to erase all of floating gates, . . . a voltage of 5 volts is applied to . . . the deep n-well 103, and the drain 119 and source 117 are floating.”). If Wang’s source 117 and n-well 103 were coupled as to permit mutual influence, they would necessarily equilibrate such that they could not be held at differing potentials. This is not merely Applicant’s argument; Applicant contends that it is an inherent result of mutual influence. And Wang expressly teaches away from mutual influence between its source 117 and n-well 103 by teaching that to erase all of its floating gates, its source 117 is floating relative to its n-well 103, which is held at 5 volts. *Id.*, column 4, lines 9-12.

In view of the foregoing, Applicant contends that Wang’s source 117 cannot be coupled to its n-well 103 per the definition provided in the Office Action as Wang expressly teaches that the necessary mutual influence is missing. However, in order to

advance prosecution, Applicant has amended claims 1, 13, 14, 16, 41, 44, 45, 46 and 54 to more clearly point out the differences between Applicant's claims and the cited reference.

Claim 1 is amended to recite, in part, "wherein the source region is coupled to a second semiconductor region underlying the first semiconductor region" and "wherein the drain region is isolated from the second semiconductor region." Applicant contends that if Wang's source 117 is coupled to its n-well 103, its drain 119 cannot be isolated from its n-well 103.

Claim 13 is amended to recite, in part, "wherein the source region is coupled to the second semiconductor region and the drain region is isolated from the second semiconductor region." Applicant contends that if Wang's source 117 is coupled to its n-well 103, its drain 119 cannot be isolated from its n-well 103.

Claim 14 is amended to recite, in part, "a source-line contact extending from the source region to a lower well region" and "wherein the drain region is not connected to the lower well region." Applicant contends that if Wang's source 117 has a contact extending to its n-well 103, its drain 119 must also be connected to its n-well 103.

Claim 16 is amended to recite, in part, "wherein the lower well region is adapted to function as a source line." Applicant contends that Wang's n-well 103 cannot be adapted to function as a source line as it is depicted to also be coupled to its drain 119 as interpreted by the Office Action.

Claim 41 is amended to recite, in part, "a first source/drain region having the second conductivity type in the well region having the first conductivity type, wherein the first source/drain region is not coupled to the well region having the second conductivity type" and "a second source/drain region having the second conductivity type in the well region having the first conductivity type, wherein the second source/drain region is coupled to the well region having the second conductivity type." Applicant contends that if Wang's source 117 is coupled to its n-well 103, its drain 119 cannot be isolated from its n-well 103.

Claim 44 is amended to recite, in part, "a drain region in the p-well, wherein the drain region has an n<sup>+</sup>-type conductivity, wherein the drain region is isolated from the n-

well” and “a source region in the p-well and having the  $n^+$ -type conductivity, wherein the source region is coupled to the n-well.” Applicant contends that if Wang’s source 117 is coupled to its n-well 103, its drain 119 cannot be isolated from its n-well 103.

Claim 45 is amended to recite, in part, “wherein the n-well serves as a source line to the floating-gate memory cell.” Applicant contends that Wang’s n-well 103 cannot be adapted to function as a source line as it is depicted to also be coupled to its drain 119 as interpreted by the Office Action.

Claim 46 is amended to recite, in part, “an  $n^+$ -type drain region in the p-well and isolated from the n-well,” “an  $n^+$ -type source region in the p-well” and “a source-line contact extending from the  $n^+$ -type source region to the n-well.” Applicant contends that if Wang’s source 117 is coupled to its n-well 103, its drain 119 cannot be isolated from its n-well 103.

Claim 54 is amended to recite, in part, “wherein the lower well region is adapted to function as source line to the floating-gate memory cell.” Applicant contends that Wang’s n-well 103 cannot be adapted to function as a source line as it is depicted to also be coupled to its drain 119 as interpreted by the Office Action.

In view of the above amendments and arguments, Applicant contends that independent claims 1, 13, 14, 16, 41, 44, 45, 46 and 54 are patentably distinct from the cited reference. As claims 2, 10-12, 17-18, 23-24, 42-43 and 48 depend from and further define one of the listed patentably distinct independent claims, these claims are also believed to be allowable. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection under 35 U.S.C. § 102(a), and allowance of claims 1-2, 10-14, 16-18, 23-24, 41-42, 44-46, 48 and 54.

*Rejections Under 35 U.S.C. § 103*

Claims 25, 28-29, 31-35, 38-39, 58, 61-62 and 64-65 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Wang (U.S. Patent 6,091,101) in view of Wang et al. (U.S. Patent 5,553,018). Applicant respectfully traverses.

As noted above, Applicant contends that Wang’s source 117 cannot be coupled to its n-well 103 per the definition provided in the Office Action as Wang expressly teaches

that the necessary mutual influence is missing. However, in order to advance prosecution, Applicant has amended claims 25, 31, 32, 33, 58, 64 and 65 to more clearly point out the differences between Applicant's claims and the cited reference.

Claim 25 is amended to recite, in part, "wherein the lower well region functions as a common source line for the plurality of floating-gate memory cells." Applicant contends that Wang's n-well 103 cannot be adapted to function as a common source line as it is depicted to also be coupled to its drain 119 as interpreted by the Office Action.

Claim 31 is amended to recite, in part, "wherein the drain region has the second conductivity type and is isolated from the lower well region." Applicant contends that if Wang's source 117 is coupled to its n-well 103, its drain 119 cannot be isolated from its n-well 103.

Claim 32 is amended to recite, in part, "a source-line contact extending below the source region to the second well region and providing electrical communication between the source region and the second well region" and "wherein the second well region is not in electrical communication with the drain region." Applicant contends that if Wang's source 117 is in electrical communication to its n-well 103, its drain 119 cannot be electrically isolated from its n-well 103.

Claim 33 is amended to recite, in part, "wherein the second well region is adapted to function as a common source line to the first block of floating-gate memory cells and the fourth well region is adapted to function as a common source line to the second block of floating-gate memory cells." Applicant contends that Wang's n-well 103 cannot be adapted to function as a common source line as it is depicted to also be coupled to its drain 119 as interpreted by the Office Action.

Claim 58 is amended to recite, in part, "a drain region in the upper well region for coupling to one of the plurality of bit lines, wherein the drain region has an  $n^+$ -type conductivity and is isolated from the lower well region," "a source region in the upper well region, wherein the source region has the  $n^+$ -type conductivity" and "a source-line contact extending below the source region to the lower well region, wherein the source-line contact is coupled to the source region." Applicant contends that if Wang's source 117 is coupled to its n-well 103, its drain 119 cannot be isolated from its n-well 103.

Claim 64 is amended to recite, in part, “wherein the source region is coupled to a second semiconductor region underlying the first semiconductor region and the drain region is isolated from the second semiconductor region.” Applicant contends that if Wang’s source 117 is coupled to its n-well 103, its drain 119 cannot be isolated from its n-well 103.

Claim 65 is amended to recite, in part, “wherein the lower well region is adapted to function as a common source line to the array of floating-gate memory cells.” Applicant contends that Wang’s n-well 103 cannot be adapted to function as a common source line as it is depicted to also be coupled to its drain 119 as interpreted by the Office Action.

Applicant contends that the secondary reference of Wang et al. fails to overcome the deficiencies as noted in the foregoing arguments. As such, in view of the above amendments and arguments, Applicant contends that independent claims 25, 31-33, 58 and 64-65 are patentably distinct from the cited references, either alone or in combination. As claims 28-29, 34-35, 38-39 and 61-62 depend from and further define one of the listed patentably distinct independent claims, these claims are also believed to be allowable. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection under 35 U.S.C. § 102(a), and allowance of claims 25, 28-29, 31-35, 38-39, 58, 61-62 and 64-65.

*Rejoinder of Withdrawn Claims*

Applicant believes it has shown that independent claims 1, 13-14, 16, 25, 31-33, 41, 44-46, 54, 58 and 64-65 are allowable. As such, Applicant contends that it is entitled to examination and allowance of all claims to which these claims are generic as provided by 37 CFR 1.141. As claims 3-9, 19-22, 26-27, 30, 36-37, 40, 47, 55-57, 59-60 and 63 depend from and further define one of the listed independent claims, Applicant contends that these allowable independent claims are inherently generic. Accordingly, Applicant respectfully requests that claims 3-9, 19-22, 26-27, 30, 36-37, 40, 47, 55-57, 59-60 and 63 be rejoined in this application and that they be allowed.


**CONCLUSION**

Claims 1, 13, 14, 16, 25, 31-33, 41, 44-46, 54, 58 and 64-65 are amended herein. Claims 15 and 49-53 are canceled hereby without prejudice or disclaimer. Claims 66-110 were previously canceled. Claims 1-2, 10-14, 16-18, 23-25, 28-29, 31-35, 38-39, 41-46, 48, 54, 58, 61-62 and 64-65 are currently pending. Claims 3-9, 19-22, 26-27, 30, 36-37, 40, 47, 55-57, 59-60 and 63 are requested for rejoinder and allowance in view of the allowance of generic claims as provided by 37 CFR 1.141.

Applicants believe that the claims are in condition for allowance and respectfully request a withdrawal of the Final Rejection and a Notice of Allowance be issued in this case. If the Examiner has any questions regarding this application, please contact the under-signed at (612) 312-2204. No new matter has been added and no additional fee is required by this amendment and response.

Respectfully submitted,

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